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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE

REPORT OF THE INDIAN TARIFF BOARD

ON THE

ALLOY, TOOL AND SPECIAL STEELS INDUSTRY

1947

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REPORT ON THE ALLOY, TOOL AND SPECIAL STEELS INDUSTRY.

Reference to the Board.

1. An application for protection to the alloy, tool and special steels industry was made to the Director-General of Industries and Supplies, Government of India, by the Tata Iron and Steel Co., Ltd., Jamshedpur, in their letter No. AO|1254|46, dated 25th April 1946. The Government of India, Department of Commerce, in their Resolution No. 218-T(55)|46, dated 12th October 1946, read with paragraphs 2 and 7 of their Resolution of the same number, dated 3rd November 1945, and paragraph 4 of their Resolution bearing the same number, dated 16th February 1946, remitted to the Tariff Board for investigation, the claim of the industry for assistance or protection during the transition period.

Terms of reference.

2. Under the terms of reference contained in the Resolution, dated the 3rd November 1945, the Board has to satisfy itself :—

(1) that the industry is established and conducted on sound business lines; and

(2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance, or

(b) that it is an industry, to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive.

Where a claim for protection or assistance is found to be established, that is, if condition (1) and condition 2(a) or (b) are satisfied, the Board may recommend :—

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed;

(ii) what additional or alternative measures should be taken to protect or assist the industry ; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations, the Board has to give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted.

Method of inquiry.

3. On 18th October 1946, the Board issued a press communiqué inviting associations or persons including producers, importers and consumers directly interested in this industry, who wished their views to be considered, to submit their representations. The Board also issued a detailed questionnaire. The list of firms, associations and persons, to whom the questionnaire was issued and from whom replies or memoranda were received, is given in Appendix I. Dr. H. L. Dey visited the Tata Iron and Steel Works at Jamshedpur from 9th to 11th April 1947. Mr. C. C. Desai, Dr. Nazir Ahmad and Dr. H. L. Dey visited the Mysore Iron and Steel Works at Bhadravati on 14th May 1947. Mr. R. N. Kapur, our Technical Adviser, and Mr. R. Sundaram, our Cost Accounts Officer, visited the

Mysore Iron and Steel Works at Bhadravati on 26th April 1947. They also examined, from 8th to 13th May 1947 at the Bombay office of the Tata Iron and Steel Company, the data of cost of production of special steels produced at the Jamshedpur factory. The oral evidence of the representatives of producers, consumers and importers was taken at a public inquiry held at Ootacamund on 27th and 28th May 1947. A list of the persons who attended the inquiry is given in Appendix II.

Scope of the inquiry.

4. The term 'special steel' is applied in metallurgy to steel "which by reason of precautions in manufacture, manipulation after manufacture, such as preparation of the surface and heat treatment, or composition, possesses properties superior, for certain specific purposes, to those of the usual commercial grades." The International Association for Testing Materials defines alloy steel as "steel which owes its distinctive properties chiefly to some element or elements other than carbon or jointly to such other element and carbon." It was agreed by all the interests concerned that, for the purpose of the present inquiry, alloy, tool and special steels would only comprise the following categories:—

(a) High speed steels—steels containing more than 13 per cent. tungsten;

(b) Stainless and heat resisting steels—steels containing more than 11 per cent. chromium;

(c) Carbon tool steels;

(d) Alloy steels containing any of the following and not included in categories (a) or (b):—

(i) 0·40 per cent. or more of chromium or nickel;

(ii) 0·10 per cent. or more of molybdenum, tungsten or vanadium;

(iii) 10·00 per cent. or more of manganese.

The demand for protection, however, excludes (c) carbon tool steels, its production having been already established in the country, and stainless steel sheets, which are not produced in the country.

History of the industry.

5. Prior to the outbreak of the war, India's steel industry was confined almost entirely to the production of ordinary mild steel. The ordnance factories were, however, making certain categories of alloy and tool steels, such as high speed steels, nickel-chromium steels, etc., to meet their own requirements. A few steel plants owning electric arc furnaces had also commenced production of carbon steel castings and spring steel to railway specifications. The outbreak of hostilities in 1939 cut off the import of alloy and tool steels and, with the mounting demand for alloy steel for armament production, the Government of India had to examine the possibilities of obtaining their requirements in the country itself. The manufacture of alloy, tool and special steels was, therefore, taken up at the instance of Government, by the Tata Iron and Steel Co., Ltd., almost exclusively for war purposes. The company utilised two small high frequency furnaces of 25 lbs. and 75 lbs. capacity, respectively, attached to the control and research laboratories, and three electric arc furnaces, each of 5 ton capacity, for the purpose. This equipment was supplemented by a ½ ton high frequency furnace, 2 planing machines, 2 lathes, heat treatment

furnaces and other ancillary equipment, loaned by Government. As a result of wartime necessity a very large variety of alloy, tool and special steels including special armament steels, such as, bullet proof steel, forgings for armaments, alloy bar stock for the production of armour-piercing projectiles, etc., were produced in India and supplied against Government demands. The range of steels manufactured covers high speed steels, stainless steels, aircraft steels to E.N. specifications, mint die steels, etc. It should be mentioned that, in manufacturing the wide range of special steels, the firm had the advantage of extensive facilities for research and experiment in its well equipped control and research laboratories, established in 1937. The Mysore Iron and Steel Works, Bhadravati, have also produced small quantities of high speed steels as an experimental measure and used these to meet their own requirements. During wartime, Messrs. Mukund Iron and Steel Works, Bombay and Lahore, Messrs. J. K. Iron & Steel Co., Ltd., Cawnpore, and Messrs. National Iron and Steel Co., Ltd., Calcutta, also made limited quantities of carbon tool steels, but not of alloy steels. We were given to understand that Tatas have practically completed negotiations with a leading British firm, which will give them all necessary technical aid regarding research and development, and that they are contemplating the formation at an early date of a new company and the installation of an up-to-date plant with a capacity of 4|5,000 tons per annum, so as to meet the entire requirements of alloy, tool and special steel in the country. We were also informed that the Mysore Iron and Steel Works, Ltd., are also negotiating with another British firm for the purchase of a larger plant of 50 ton annual capacity for the production of high speed steel. Both these proposed plants are expected to go into production in two or three years' time.

Raw materials.

6. The raw materials required for the manufacture of alloy, tool and special steels are (1) plain carbon and alloy steel scrap, (2) synthetic pig iron, (3) several kinds of ferro-alloys, such as, ferro-tungsten, ferro-chrome, ferro-vanadium, ferro-molybdenum, ferro-silicon, ferro-titanium, (4) certain non-ferrous metals, such as, nickel, cobalt and chromium, and (5) fluxing materials like lime and flourspar. The Tata Iron and Steel Co., Ltd., have given the following estimate of the quantities of different raw materials required for a total output of 1,500 tons of alloy, tool and special steels :—

(1) Plain carbon and alloy steel scrap	2,900 tons.
(2) Synthetic pig iron	30 „
(3) Ferro-alloys :—	
Ferro-tungsten	180 „
Ferro-chrome	225 „
Ferro-molybdenum	15 „
Ferro-vanadium	30 „
Ferro-silicon	15 „
Ferro-titanium	Small quantities.
Ferro-manganese	Do.
(4) Non-ferrous metals :—	
Nickel	50 tons.
Cobalt	5 tons.
Chromium	Small quantities.
(5) Fluxes :—	
Lime	90 tons.
Flourspar	22 „

With the exception of ferro-manganese and ferro-silicon, which are being produced by Tatas and the Mysore Iron and Steel Works, respectively, none of the ferro-alloys and non-ferrous metals in the list are produced in the country. They are all imported. There is little possibility of commercial manufacture in India of these ferro-alloys and non-ferrous metals within the next three years. The other materials mentioned in the list, *i.e.*, synthetic pig iron, scrap, lime and flourspar, are produced in the country. These ferro-alloys and non-ferrous metals are essential ingredients in the manufacture of different kinds of alloy, tool and special steels and constitute a high proportion of the total cost of their manufacture. So long as the requisite ferro-alloys and non-ferrous metals are not manufactured in the country, the alloy, tool and special steels industry must labour under the disadvantage of having to depend on the imported materials. This handicap to the indigenous industry is aggravated by the fact that the non-ferrous metals are at present subject to an import duty of 30 per cent. *ad valorem* and the ferro-alloys to a duty of 18-3|4 per cent. *ad valorem.*

Process.

7. Alloy, tool and special steels are manufactured in the electric arc or high frequency induction furnaces. For the purpose of this report, it is not necessary for us to describe the process of manufacture in detail. It is, however, important to mention that, at the time of heating, cogging, rolling, annealing, etc., every precaution has to be taken to see that the steel is treated under very rigid control of temperature and other conditions. At various intermediate stages, the material is inspected, checked, dressed and ground, and fractures are taken for studying the micro-structure of the material. Tests are also carried out to check the chemical composition and the micro-structure. We were informed that, at the Tata Iron and Steel Works, every bar has to pass the requisite tests and is afterwards stamped at both ends with the word "Tata", the specification number and the cast number.

Uses.

8. There is considerable justification for the statement that we are passing from the steel age to the alloy steel age. Apart from the remarkable performances hitherto unattainable, alloy steels are produced with but one aim in view, *viz.*, economy resulting from long life and fewer breakages and repairs. In the present-day engineering industry, there is practically no field of production in which alloy steels are not used in one form or another. Where high values for tensile strength together with great toughness and shock resistance are demanded, only special steels can be used. Certain alloy steels, besides providing the user with more desirable rut physical properties than can be obtained with plain carbon steel, provide a greater temperature range for heat treatment. Also, a considerably greater range of mechanical properties is available with a smaller mass of alloy, tool and special steels as compared with plain carbon steel. In machine construction and other applications where stresses to be resisted are imperfectly understood, the use of alloy steels permits a higher margin of safety. The following short list of applications will illustrate the uses of alloy, tool and special steels in various fields:—

(1) Carbon tool steels for making cutting tools, coinage dies, precision tools, razor blades, taps and punches, etc.

(2) Nickel steels for constructional purposes, such as, automobile and machine construction of all kinds.

(3) Chromium steels for special purposes involving resistance to wear and abrasion, such as, roller bearings, crusher plates, balls and stamp shoes ; rustless steel parts, such as, pump rods and cutlery ; and also for decorative purposes.

(4) Silicon steels for low hysteresis steels and springs and for acid resistant parts.

(5) Manganese steels for points, crossings, rails, crushers and dredger parts.

(6) Tungsten steels for magnets and high speed cutting tools.

(7) Nickel-chrome steels for highly stressed constructional parts, oil hardening and case hardening gears, armour plates and projectiles.

(8) Austenitic nickel-chromium steels for corrosion and heat resistant parts.

(9) Chrome-vanadium steels for springs, constructional work, tools, forgings and super-heated tubes.

(10) Molybdenum steels for super-heated steam parts, such as, tubes, bolts, etc.

Imports.

9. Sea-borne trade account shows separately statistics relating only to cast tool steel (high speed) and cast tool steel (carbon). These figures are given in appendix III. The High Speed and Tool Steel Association of India, Calcutta, which represents 34 important importing firms, has given an estimate of imports as shown below:—

	Pre-war tons	Present tons
(1) High speed tool steel of all grades including 10 per cent. tungsten hot die steel	375	450
(2) Alloy, tool and constructional steels	800	1,000
(3) Stainless steel, including sheets, strips and bars	400	500
(4) Miscellaneous steels, including magnet steel, heat resisting steel, etc.	120	150
(5) Carbon steel, not including the cheaper grades of basic open hearth steels	700	850
Total ..	2,395	2,950

These figures, however, include certain categories of alloy, tool and special steels, as for example, stainless steel sheets and carbon tool steel, which are excluded from the scope of the inquiry (*vide* paragraph 4). Consequently, it is not possible to give accurate import statistics for those categories of steel which are the subject of this inquiry,

Indigenous demand.

10. The Iron and Steel (Major) Panel in their second report have given an estimate prepared by the Tata Iron & Steel Co., regarding the present and post-war demands for alloy, tool and special steels. The figures are reproduced below:—

Steel	Present demand.	Postwar demand within 5 years or so.
	Tons.	Tons.
High speed steels	250/300	300/350
Carbon tool steels	2000/3000	3000/4000
Alloy steels	600/800	2000/3000
Drill steels	400/500	1000
Stainless steels	100	200/300

These figures were scrutinised by the representatives of producers, consumers and importers present at the public inquiry, and they gave us the following estimate of demand of the three kinds of alloy, tool and special steels, which form the subject of this inquiry:—

Category of steel.	Estimated present demand.	Estimated demand during the next three years.
	Tons.	Tons.
High speed steels	300	350
Stainless and heat resisting steels (bars)	150	225
Other alloy steels	2000	3250
	2450	3825

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Indigenous production.

11. Practically, the only producer of alloy, tool and special steels in India at the present time is the Tata Iron & Steel Co., Ltd. Their estimated annual capacity and actual production in the last two years are given in the following table:—

Category of steel.	Annual Capacity.	Production in 1945/46.	Production from 1st April 1946 to 31st May 1947.
	Tons.	Tons.	Tons.
High speed steels	200/250	126	61
Stainless and heat resisting steels (bars) ..	100/120	38	41
Other alloy steels	1120/1250	1300	566
Total ..	1420/1620	1464	668

It will be noted that in 1945/46, taking all the three items together, their actual production approached their full capacity, though the production of high speed steels and stainless steels was still below capacity. During the 14 months from 1st April 1946 to 31st May 1947, their production fell to less than one half of the capacity. The firm has explained this by saying that the demand for their products has declined considerably due to import licenses having been issued rather freely for this period. As already stated in paragraph 5, the firm is carrying on negotiations with a leading British firm for the installation of a self-contained and larger unit with a capacity of 4|5,000 tons, but we were informed that the new plant is not likely to be established or go into production within the next two or three years. The Mysore Iron and Steel Works stated that they were at present producing something like 2 tons of high speed steels a year, but that they were also contemplating the installation of a larger plant with a capacity of 50 tons per annum within the next two or three years.

Quality of the indigenous product.

12. Certain consumers have stated that the working life of a tool or die produced from the Indian-made alloy tool steel is usually shorter than tools or dies produced from imported steels, and that whereas the imported product is always of uniform quality, the home-made article is non-uniform and varies considerably in quality. The High Speed and Tool Steel Association of India, Calcutta, also informed us that the consumers generally show a preference for the imported article. But there are other consumers who have stated that the indigenous product is as good as the imported one. The Department of Industries and Supplies, Government of India, has stated that the quality of the indigenous material is medium to satisfactory. We were also informed that in the early days of production, some complaints were received by the Iron and Steel Control, but that these were settled to the entire satisfaction of the indentors. We have also received evidence to show that the various categories of special steels produced by the Tata Iron and Steel Co., have passed rigid tests made by the Ordnance Department, the East Indian, Bengal Nagpur and North Western Railways, and the Metallurgical Inspectorate, Indian Stores Department. The weight of positive evidence on the matter supports the view that this particular company is definitely capable of manufacturing alloy, tool and special steels of high quality. The adverse opinion regarding the quality given by some of the consumers seems to us to be based not so much on positive evidence regarding the inferior performance of Indian-made steels, but on the natural inclination of consumers to follow the principle of ' safety first ' by indenting well-known brands of imported steels, which have proved their quality in the past and which have become quite familiar to them. We also think that the attitude of hesitation shown by some of the consumers towards the use of Indian-made special steels is partly at least due to the fact that the manufacturers had no occasion in the past to establish contact with dealers and consumers, practically the whole of their output having been taken up by railways and Government departments. In order to overcome this hesitation or prejudice among the consumers, it is necessary that the manufacturers of special steels should build up an adequate sales and service organization, so as to give the necessary information and guidance to the users of special steels regarding the heat treatment and manipulation of different kinds of special steels for different specific purposes. For, it is only through such means that the importers have popularised their special

steels. We were, however, informed that the Tata Iron & Steel Co., have also just begun taking these necessary steps for popularising their special steels, and we have no doubt that they will soon be able to overcome the hesitation or prejudice against their special steels, which may be still lingering on among the consumers. As already stated, every bar of special steels produced by the Tatas, after it has passed the requisite test and inspection, is stamped at both ends with the word "Tata", the specification number and the cast number, which like the brands marked on the imported special steels, should serve as a guarantee of composition and quality. We were also informed that if any consumer can prove that any bars of special steel supplied by Tatas are found to be defective, such bars are invariably replaced free of cost.

Estimate of cost of production and fair selling price.

13. Our Cost Accounts Officer, in co-operation with our Technical Adviser, examined the cost data and prepared an estimate of cost and fair selling price of four representative categories of alloy tool and special steels manufactured by Tatas. This estimate was discussed by us with the representatives of the firm and was modified in some respects. As we were requested to treat the details of the estimate as confidential, we are enclosing these details in a separate confidential statement, which is not to be published. We give below only the figures of overall costs of production and fair selling prices of these four representative items :—

Estimate of cost of production and fair selling price during 1947-48.

(1) *3½ per cent. nickel steel*
(per ton)

		Rs.
(*i*) Total cost of production up to 31-3-47		617·51
(*ii*) Add profit at 10 per cent. on (*i*)		61·75
(*iii*) Fair selling price up to 31-3-47 (f.o.r. Jamshedpur)	Rs.	679·26
(*iv*) *Add* increase in working cost as from 1-4-47 at 30 per cent on working cost	35·70	
Add profit at 10 per cent.	3·57	39·27
(*v*) Fair selling price as from 1-4-47 (f.o.r. Jamshedpur)		718·53

(2) *18 % Tungsten high speed steel* (*18% W—4% Cr.—1% V.*)
(per lb.)

		Rs.
(*i*) Total cost of production up to 31-3-47		3·79
(*ii*) *Add* profit at 10% on (*i*)		0·38
(*iii*) Fair selling price as on 31-3-47 (f.o.r. Jamshedpur)	Rs.	4·17
(*iv*) *Add* increase in working cost as from 1-4-47 at 30% on working cost	0·31	
Add profit at 10%	0·03	0·34
(*v*) Fair selling price (f.o.r. Jamshedpur) as from 1-4-47		4·51

(3) *5% Cobalt steel* (*18% W—4% Cr.—1% V.—5% Co.*)
(Per lb.)

		Rs.
(*i*) Total cost of production up to 31-3-47		4·54
(*ii*) *Add* profit at 10% on (*i*)		0·45
(*iii*) Fair selling price as on 31-3-47 (f.o.r. Jamshedpur)	Rs.	4·99
(*iv*) *Add* increase in working cost as from 1-4-47 at 30% on working cost	0·31	
Add profit at 10%	0·03	0·34
(*v*) Fair selling price (f.o.r. Jamshedpur) as from 1-4-47		5·33

(4) *Stainless steel (18% Cr.—8% Ni.)*
(Per lb.)

	Rs.	Rs.
(*i*) Total cost of production up to 31-3-47		2·09
(*ii*) *Add* profit at 10% on (*i*)		0·21
(*iii*) Fair selling price as on 31-3-47 (f.o.r. Jamshedpur)		2·30
(*iv*) *Add* increase in working cost as from 1-4-47 at 30% on working cost	0·28	
Add profit at 10%	0·03	0·31
(*v*) Fair selling price (f.o.r. Jamshedpur) as from 1-4-47		2·61

Comments on the estimate

14. (a) *Cost data*:—Working costs up to the ingot stage are maintained in detail, while costs in respect of the subsequent processes are not separately recorded, as they are carried out in the bigger plant for mild steel. The firm has not yet installed a standardised costing system regarding these special steels. In the circumstances, such cost data as were available were examined and estimate of costs was built up. All types of steels are not regularly manufactured each month and consequently, monthly costs were adopted and adjusted suitably for annual cost variations in the light of experience gained during the whole year 1946-47.

(b) *Raw materials* :—These are broadly divided into (i) ferro-alloys, (ii) non-ferrous metals and (iii) iron and steel scraps. All the ferro-alloys except ferro-silicon and ferro-manganese and all the non-ferrous metals are imported. At the present time, Tatas have got stocks of these ferro-alloys and non-ferrous metals required for about one year on the basis of production to their full capacity. There are also certain quantities of ferro-alloys and non-ferrous metals in Government stocks which were built up during war-time. Any steel manufacturers requiring to buy ferro-alloys and non-ferrous metals have to buy them, in the first instance, from the Government stocks, as far as available. The average weighted prices of ferro-alloys and non-ferrous metals available at the Tatas' stocks are at present in most cases lower than the bond issue prices of Government stocks. Our estimate of cost is based upon the average weighted prices of Tatas' stocks of ferro-alloys and non-ferrous metals.

(c) *Net yield* :—It was found that the net yield of finished steels at Tatas' is somewhat on the low side as compared with that at the Metal and Steel (Ordnance) Factory, Ishapore.

(d) *Credit for scrap* :—This is divided into saleable and non-saleable scrap. The saleable scrap is valued at the prices calculated on the metal content and credit is given for the same in the cost estimate.

(e) *Profit-sharing bonus* :—All employees were entitled in the past to a profit-sharing bonus at rates varying from 2 to 4 months' basic wages. We have allowed profit-sharing bonus equal to three months' basic wages.

(f) *Increase in cost* :—According to a recent agreement between the management and the labour union, there has been an increase in wage rates from 1st April 1947, which will raise the working cost by 27 per cent. Some provision has also been made for increase in prices of iron-ore, coal, ferro-alloys and steels and also for Bihar sales tax. All these items are estimated to increase the working cost by 30 per cent. as from 1st April 1947.

(g) *Managing Agents' commission* : Under the terms of agreement, the Tata Iron and Steel Co., have to pay the managing agents as remuneration, a commission varying from 5 to 7½ per cent., depending upon the amount of net profits. In a number of cases, we have allowed a small amount for managing agents' remuneration for such services as are considered to be essential to efficient production. In this particular case also, the managing agents do perform certain essential services in connection with production and sales. In normal circumstances, therefore, a reasonable amount might have been allowed for managing agents' remuneration as part of the cost of production. But, in view of the fact that the production of alloy, tool and special steels is still in its initial stage of development and also because this production forms a very small part of the total productive activities of the Tata Iron and Steel Co., we decided that the claim for managing agents' remuneration might be waived for the present, and this was accepted by the representatives of the Company.

(h) *Profit margin* : It is our normal practice to allow 4 per cent. interest on working capital and 10 per cent. return on fixed capital. In this particular case, it was not possible to allocate working capital or fixed capital to the production of alloy, tool and special steels. From an examination of the Company's accounts for the year ended 31st March 1946, it was found that the frequency of turnover for the entire activities of the Tata Iron and Steel Co. was 0.6. On this basis, a margin of 15 per cent. on the cost of production to cover interest on working capital and return on fixed capital was indicated. We have allowed a margin of 10 per cent. on cost of production for this purpose.

Period of validity of the estimate.

15. The estimate of cost and fair selling price we have given, is based upon the weighted average prices of ferro-alloys and non-ferrous metals available from the stocks of the Company. We were informed that these stocks would be used up in about a year's time. Under the present system of control, when the Company's stocks of ferro-alloys and non-ferrous metals are exhausted, they will have to buy their supplies from Government stocks at bond issue prices, which, as we have said, are in some cases higher than the weighted average prices of Tatas' stocks. A statement showing the quantities of certain ferro-alloys and non-ferrous metals available in Government stocks is given in Appendix IV, and a comparative statement showing the present average weighted prices of Tatas' stocks and Government issue prices for various ferro-alloys and non-ferrous metals is given in Appendix V. Both these sets of prices are higher than the current prices of most ferro-alloys and non-ferrous metals in world markets. We are unable to say at this stage what the cost of production of special steels at Tata Iron and Steel Works will be at the end of one year. The future cost of production will depend, among other things on (a) the bond issue prices of Government stocks, (b) the future prices of non-ferrous metals and ferro-alloys in world markets and (c) action taken by Government with regard to our recommendation in the report on non-ferrous metals that the present duty of 30 per cent. *ad valorem* on non-ferrous metals should be removed. It is expected that the position with regard to these factors will have become clearer within a year. The estimate of cost and fair selling price should, therefore, be re-examined at the end of one year.

Existing rates of import duty.

16. Under the Indian Tariff Amendment Act (Act XXV of 1947 published in the Gazette of India, dated April 19, 1947), the existing rates of import duty on alloy, tool and special steels are as follows :—

Item No.	Name of article.	Nature of duty.	Standard rate.	Preferential rate.	Duration of the duty.
63(30)	Alloy, tool or special steel rod, bar and flat. (*a*) of British manufacture.	Protective	1¼ times the excise duty leviable for the time being on steel ingots produced in British India, plus Rs. 10 per ton, or 10 per cent. *ad-valorem*, whichever is higher, plus one-fifth of such higher amount.	..	March 31st 1948.
	(*b*) Not of British manufacture.	Protective	1¼ times the excise duty leviable for the time being on steel ingots produced in British India, plus Rs. 39 per ton, or 20 per cent. *ad-valorem*, whichever is higher, plus one-fifth of such higher amount.	..	March 31st 1948.

NOTE :—At current c.i.f. prices, the effective duty in both the cases is given by the *advalorem* rate, which comes to 12 per cent. in (*a*) and 24 per cent. in (*b*).

C.i.f. prices and landed costs of imported special steels, as from 1-6-47.

17. The data regarding c.i.f. prices and landed costs of the four kinds of alloy, tool and special steels under inquiry are rather scanty. The following figures have been furnished by the High Speed and Tool Steel Association of India, Calcutta, regarding the latest c.i.f. prices and landed costs of imports from U.K. :—

C.i.f. prices and landed costs of imported special steels.

	3½% Nickel steel (¾″)	18% W—4% Cr.—1% V Tungsten steel (¾″)	18% W—4% Cr.—1% V—5% Co. Cobalt steel (¾″)	18% Cr. —8% Ni. Stainless steel (¾″)
	(per ton) Rs.	(per lb.) Rs.	(per lb.) Rs.	(per lb.) Rs.
(*a*) C.i.f. price	820·0	3·34	4·06	1·16
(*b*) Clearing charges (approximately 2½%) ..	20·5	0·06	0·06	0·02
(*c*) Landed cost without duty	840·5*	3·40*	4·12*	1·18
(*d*) Duty at 12% on c.i.f. value	98·4	0·40	0·49	0·14
(*e*) Landed cost with duty	938·9	3·80	4·61	1·32†

* As from 1-6-47. Figures given by the High Speed and Tool Steel Association of India, Calcutta.

† Figures furnished by the Collector of Customs, Bombay.

18. *Comparison of fair selling prices with landed costs.*

	3½% Nickel steel (¾″) (per ton)	18% W—4% Cr.—1% V Tungsten steel (¾″) (per lb.)	18% W—4% Cr.—1% V 5% Co. Cobalt steel (¾″) (per lb)	18% Cr.—8% Ni Stainless steel (¾″) (per lb.)
	Rs.	Rs.	Rs.	Rs.
(*a*) Fair selling price as from 1-4-47 ..	718·53	4·51	5·33	2·61
(*b*) Landed cost without duty	840·50*	3·40*	4·12*	1·18
(*c*) Difference between the fair selling price and landed cost, *i.e.*, (*a*)—(*b*)	—121·97	1·11	1·21	1·43
(*d*) Price difference as percentage on c.i.f. value	—14·9%	33%	30%	123%
(*e*) Existing duty on British steel ..	12%	12%	12%	12%
(*f*) Additional duty required	Nil	21%	18%	111%

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* As from 1-6-47.

Present position regarding import control and Government surplus stocks.

19. (a) *Import control.*—There is at present a system of import control under which an indentor is compelled to buy alloy, tool and special steels from existing Government surplus stocks, failing which he is given an import licence. In spite of this control, import licences have already been issued for 3,298 tons during the year 1946-47. The indigenous manufacturers apprehended that the importation of considerable quantities of special steels against licences already issued would leave for them only a small proportion of the domestic market for the next one or two years. They pointed out that, on account of lack of orders, their production during the six months from April to September 1946 dropped to half their output for a similar period in the year 1945-46.

(b) *Government surplus stocks.*—We have received a statement dated 6|7th June 1947 (Appendix VI) from the Director of Tool and Alloy Steels, Office of the Iron and Steel Controller, Calcutta, which shows that, according to present information, about 2,400|2,500 tons of alloy, tool and special steels of the categories under inquiry are available for disposal from Government stocks, the figures for different categories being as follows :—

	Tons.
(*i*) High speed steel	430
(*ii*) Stainless and heat resisting steels (bars)	18
(*iii*) All other alloy steels	1,935/2,035
Total ..	2,383/2,483

In paragraph 10, we have estimated the country's demand for these categories of steels as follows :—

Category of steel.	Estimated present demand.	Estimated demand during the next three years.
	(tons)	(tons)
High speed steels	300	350
Stainless and heat resisting steels (bars)	150	225
Other alloy steels	2,000	3,250
Total ..	2,450	3,825

It will be seen that the Government surplus stocks for disposal, about which more or less definite information is available to date, would be sufficient to meet a year's demand for high speed steels, and other alloy steels, while there may be a gap between demand and Government surplus stocks in respect of stainless and heat resisting steels. But we were given to understand that there are certain other Government stocks which are yet to be classified into definite categories.

Protection recommended.

20. (a) *Import duty* :—The figures of comparative prices given in paragraph 18, indicate that no duty is required for the protection of 3½ per cent. nickel steel and that the additional duties required would be 21 per cent. *ad valorem* in the case of 18 per cent. tungsten steel, 18 per cent. *ad valorem* in the case of 5 per cent. cobalt steel, and 111 per cent. *ad valorem* in the case of stainless steel. We were informed that the total value of 3½ per cent. nickel steel produced by the Tata Iron and Steel Co., would be about 1.4 per cent., that of stainless steel about 2 per cent., and that of 18 per cent. tungsten steel about 56 per cent. of the total value of all special steels produced by them. In view of this, a duty of 30 per cent. *ad valorem* on British steel was considered sufficient for the protection of these different kinds of steel. The duty of 30 per cent. would equalise in a fair degree the landed cost with the fair selling price. We, therefore, recommend that the protective duty of 30 per cent. should be levied on these steels when imported from U.K. The corresponding duty on non-British steel should, if necessary, be adjusted according to the terms of the Indo-British Trade Agreement. This duty should remain in force until 31st March 1949. The stocks of non-ferrous metals and ferro-alloys held by Tatas are likely to be used up before this date. Similarly, Government stocks of some of these non-ferrous metals and ferro-alloys are also expected to be exhausted during this period. Thereafter, the manufacturers of these categories of special steel would be in a position to buy the non-ferrous metals and ferro-alloys at world prices. The price of non-ferrous metals in the Indian market will be more definitely known when Government pass their final orders on our report regarding non-ferrous metals. The position regarding Government surplus stocks of special steels will also have become clearer in the meantime.

For all these reasons, it would be necessary that the estimate of cost of production and fair selling price as also the degree and method of protection should be re-examined before 31st March 1949. We therefore recommend that this re-examination should be undertaken towards the end of 1948.

(b) *Import control and disposals policy* :—Having recommended a rate of duty which would equalise the landed cost with the fair selling price, we would normally have considered such a step as sufficient to protect the indigenous manufacturers. There are, however, special reasons which led us to conclude that the protective duty of 30 per cent. in this case would not, by itself, be effective to protect the indigenous industry, at least for the time being. In view of the existence of the Government surplus stocks, as mentioned in paragraph 19(b), and in view of the import licences which have already been issued, as referred to in paragraph 19(a), the indigenous manufacturers apprehend that they are not likely to secure a substantial portion of the domestic market for a year or two. It is also contended that the market for special steel is more a quality market than a price market and that the consumers would, as a rule, prefer to buy well-known brands of imported steel irrespective of the comparative prices of imported and indigenous steel. The indigenous manufacturers, therefore, apprehend that, until their products have been well established in the domestic market for a reasonable period, a mere price equalisation by means of import duty will not protect them adequately against foreign competition. There is some force in this contention also. For these reasons, we recommend that the import control should continue until 31st March 1949 and that the disposals policy and import control should be modified on the following lines :—

(i) In dealing with applications for indents, full account should be taken of the indigenous productive capacity as well as Government surplus stocks before issuing import licences. Further, in allocating indents between Government stocks and indigenous manufacturers, the need for utilising the full productive capacity in the country should be kept in view.

(ii) Government should examine all un-utilised import licences in respect of these three categories of steel, and to the extent to which they can be produced in the country or are available with Government stocks, such licences should be cancelled, as far as practicable.

(iii) An Advisory Committee, representing Iron and Steel Control, producers, consumers and importers, should be appointed to advise Government in regard to action to be taken under (i) and (ii) above.

(iv) During the period ending 31st March 1949 ceiling prices for 3½ per cent. nickel steel, 18 per cent. tungsten steel, and 5 per cent. cobalt steel should be fixed for indigenous products on the basis of the estimates of fair selling prices given by us in paragraph 13. With regard to stainless steel, our estimate of the fair selling price is Rs. 2.61 per lb. The landed cost of imported stainless steel, with the duty of 30 per cent. which we have recommended will be Rs. 1.53 per lb. In view of the fact that stainless steel is required, among other things, for the manufacture of such essential articles as surgical instruments, we think that it would not be fair to impose a heavy burden on the consumers of stainless steel in the matter of price. It should also be remembered that the value of stainless steel produced by Tatas forms a very small percentage of their total output of the categories of steel under enquiry. We, therefore, recommend that the ceiling price for stainless steel should be fixed at Rs. 1.53 per lb. If Tatas decide to continue the production of stainless steel, they can well afford to bear a small loss which they will have to incur on account of the ceiling price being lower than their fair selling price by about Rs. 1.08 per lb.

(c) *Assurance of protection* :—In view of the existence of the Government surplus stocks and the prevailing prices of non-ferrous metals, we have recommended the imposition of the protective duty and the operation of the import control to be in force until 31st March 1949. In view of the importance of this industry, we think that a period of about three years should be given to the industry to establish itself. We, therefore, recommend that the industry should be given an assurance of protection for the period ending 31st March 1950. If our expectations prove correct, the Government surplus stocks should have been disposed of before 31st March 1949 and more definite data should be available regarding the price of non-ferrous metals. The degree and method of protection required for the period 1st April 1949 to 31st March 1950 will have to be decided later on. With this end in view we have already recommended that there should be a review towards the end of 1948.

Re-classification of tariff item and alteration in rates of duty.

21. (a) At present, alloy, tool or special steel falls under item No. 63 (30) of the Indian Customs Tariff Schedule, as notified in the Gazette of India, dated 19th April 1947. The present classification, among other things, includes (a) carbon tool steel, which does not require protection, and (b) alloy, tool or special steels, precision ground and polished bars, bright drawn bars, which are not manufactured in India. These categories (a) and (b) should be excluded from the tariff item 63(30) and be placed under item Nos. 63(2) and 63(3). Item 63(30) should now be re-classified as indicated in (b) below.

(b) If our recommendations are accepted, item No. 63(30) of the Indian Customs Tariff Schedule should be changed as follows :—

Item No.	Name of article.	Nature of duty.	Standard rate	Duration of the duty.
63(30)	Alloy, tool or special steel rods or bars of the following categories, but excluding precision ground and polished bars, bright drawn bars, blue reeled bars and silver steel finish bars :— (*i*) High speed steels—steels containing more than 13 per cent. tungsten. (*ii*) Stainless and heat resisting steels—steels containing more than 11 per cent. chromium. (*iii*) Other alloy steels containing any of the following and not included in categories (*i*) or (*ii*) :— 0·40 per cent. or more of chromium or nickel ; 0·10 per cent. or more of molybdenum, tungsten or vanadium ; or 10 00 per cent. or more of manganese ..	Protective	30% *ad-valorem*	March 31st 1949.

N. B.—The duty is applicable to special steels of British manufacture. The corresponding duty on non-British steels should, if necessary, be adjusted according to the terms of the Indo-British Trade Agreement.

Refund of duty on machinery.

22. We recommend that the duty on all future imports of machinery required for the alloy, tool and special steels industry should be refunded.

Detailed cost data to be maintained.

23. The manufacturers of alloy, tool and special steels should maintain separate and detailed cost data for these steels.

Eligibility for protection.

24. Taking due account of the wartime difficulty regarding the availability of machinery and equipment, we consider that the industry is established and conducted on sound business lines. The industry is favourably situated regarding market, skilled labour, research facilities and some of the important raw materials like steel scrap, synthetic pig-iron and fluxes. The non-availability in the country of the requisite non-ferrous metals and all ferro-alloys except ferro-silicon and ferro-manganese, some of which constitute large elements in the cost of production, is a great handicap which will last till those materials are produced in the country. This handicap has become all the greater at present on account of two factors, *viz.,* (a) the present import duties of 18¾ per cent. on ferro-alloys and 30 per cent. on non-ferrous metals ; and (b) the fact that the stocks of ferro-alloys and non-ferrous metals available with the manufacturers and with Government, which have to be used by the manufacturers are on the average more costly than what they would be at the present-day world prices. If and when these last two factors of handicap are mitigated or removed, the competitive position of the indigenous manufacturers will improve. Further, when the proposed larger and more economical plant is installed for production, the position will become stronger still. The present cost-price data indicate a strong probability that the industry will become independent of protection within a reason-

able period of time. From the data of comparative prices given in paragraph 18, we consider that the cost of protecting the industry will not lay an excessive burden on the community. The industry is, therefore, eligible for protection.

Summary of conclusions and recommendations.

25. Our conclusions and recommendations are summarised as under :—

(i) The present inquiry is confined to three categories of alloy, tool and special steels, specified in paragraph 4.

(ii) The manufacture of alloy, tool and special steels was taken up during the war, at the instance of Government, by the Tata Iron and Steel Co., Ltd., to meet urgent defence requirements. (Paragraph 5).

(iii) The disadvantage of the industry's having to depend on some imported materials is a handicap, which is further aggravated by the fact that the non-ferrous metals and the ferro-alloys are at present subject to import duties of 30 per cent. and 18¾ per cent. *ad valorem*, respectively. (Paragraph 6).

(iv) The manufacture of alloy, tool and special steels is a highly technical process, involving rigid control of temperature and other conditions. (Paragraph 7).

(v) In the present-day engineering industry, there is practically no field of production in which alloy steels are not used in one form or another. (Paragraph 8).

(vi) Separate import statistics for these three categories of special steels are not available. (Paragraph 9).

(vii) The annual demand for these steels is estimated to be 2,450 tons at present and 3,825 tons in the next 3 years. (Paragraph 10).

(viii) The present annual capacity of the indigenous industry is about 1,500 tons. The present manufacturers contemplate the installation of a larger plant with a capacity of 4|5000 tons per annum, but this is not likely to materialise within the next two or three years. (Paragraph 11).

(ix) The weight of positive evidence shows that alloy, tool and special steels of high quality can be manufactured in the country. (Paragraph 12).

(x) The estimated fair selling price is Rs. 718.53 per ton of 3½ per cent. nickel steel, Rs. 4.51 per lb. of 18 per cent. tungsten high speed steel, Rs. 5.33 per lb. of 5 per cent. cobalt steel. The fair selling price, as suggested by us, for stainless steel is Rs. 1.53 per lb. (Paragraphs 13 and 20).

(xi) These prices should remain valid up to 31st March, 1949, and the matter should be re-examined towards the end of 1948. (Paragraph 15).

(xii) The present import duty is 12 per cent. *ad valorem* for special steels of British manufacture, and 24 per cent. *ad valorem* for special steels of non-British manufacture. (Paragraph 16).

(xiii) A protective duty of 30 per cent. *ad valorem* should be imposed on imported special steels of British manufacture, which should remain in force up to 31st March 1949. [Paragraph 20(a)].

(xiv) For the period ending 31st March 1949 the import control should continue and the policy of orderly disposals of Government stocks and import control and the fixation of ceiling prices as recommended by us should be adopted. [Paragraph 20(b)].

(xv) An assurance of protection should be given to the industry for the period ending 31st March 1950. [Paragraph 20(c)].

(xvi) The fair selling prices and the method of protection should be re-examined towards the end of 1948. [Paragraph 20(b)].

(xvii) Tariff item No. 63(30) should be reclassified. (Paragraph 21).

(xviii) The duty on all future imports of machinery required for the industry should be refunded. (Paragraph 22).

(xix) Manufacturers of these steels should maintain separate and detailed cost data. (Paragraph 23).

(xx) The industry is eligible for protection. (Paragraph 24).

Acknowledgments.

26. The Board wishes to express its thanks to Mr. Jang Bir Singh, Development Officer, Directorate-General of Industries and Supplies, Government of India, Mr. D. D. Kamat, Director (Technical), of the Iron and Steel Controller's Office, Mr. M. Ahmadullah, Secretary to the Board, Mr. R. N. Kapur, Board's Technical Adviser, and Mr. R. Sundaram, Board's Cost Accounts Officer, for help in connection with the inquiry.

SHANMUKHAM CHETTY,
President.

C. C. DESAI,
Member.

NAZIR AHMAD,
Member.

H. L. DEY,
Member.

M. AHMADULLAH,
Secretary,

(CAMP) OOTACAMUND,

Dated, the 19*th June,* 1947.

APPENDIX I.

List of firms or bodies to whom the questionnaire was issued and of those who replied to it.

(Those who have replied to the questionnaire are marked with an asterisk.)

Producers :

*1. The Tata Iron and Steel Co. Ltd., Jamshedpur.
*2. Mysore Iron and Steel Works, Bhadravati (Mysore State).
3. Bhartia Electric Steel Co. Ltd., 42, Shibtolla Street, Calcutta.
4. Indian Hume Pipe Co. Ltd., Ballard Estate, Bombay.
5. J. K. Iron and Steel Works, Kamala Tower, Cawnpore.
6. Mukund Iron and Steel Co. Ltd., Signal Hill Avenue, Mazagaon, Bombay.
7. Metal and Steel Factory, Ishapore, Calcutta.
8. National Iron and Steel Co. Ltd., 4, Dalhousie Square, Calcutta.
9. Ordnance Factory, Muradnagar, N. W. Railway (U.P.).
10. Steel and General Mills Co. Ltd., Moghulpura, Lahore.

Importers :

1. Ferro Alloys and Metals Ltd., 38, Queen's Road, Bombay.
2. Hakimjee Lockmanjee, C. P. Tank Road, Bombay.
3. Heatly and Gresham Ltd., 9, Forbes Street, Bombay 1.
4. Machine Tool (India) Ltd., Wilson Road, P. B. 522, Bombay.
5. Powells Ltd., Lamington Road, Bombay.
6. J. J. Saville and Co. Ltd., C|o Volkart Brothers, Graham Road, Ballard Estate, Bombay.
7. Sudsons Ltd., 5|1, Harish Mookerjee Road, Calcutta.
8. United Industries Corporation, Saifabad, P.B. No. 147, Hyderabad.
9. United Steel Companies (India) Ltd., Patel House, Churchgate Street, Bombay.

Consumers :

*1. The Bombay Electric Supply and Tramways Co. Ltd., Bombay.
*2. British India Electric Construction Co. Ltd., Kidderpore, Calcutta.
*3. Braithwaite and Co., Hide Road, Calcutta.
*4. The Commissioners for the port of Calcutta, Kidderpore, Calcutta.
*5. Burn and Co., Howrah.
*6. The Controller of Stores, B. B. & C. I. Railway, Mahalaxmi, Bombay.
7. The Controller of Stores, N. W. Railway, Lahore.
8. The Controller of Stores, Port Commissioner's Department, Kidderpore Dock.
9. The Controller of Stores, S. I. Railway, Golden Rock, Trichinopoly.
10. Cooper Engineering Ltd., Satara Road (M. S. M. Railway).
11. The Controller of Stores, M. S. M. Railway, Perambur, Madras.
12. Cawnpore Electric Supply Co. Ltd., Cawnpore.
13. The Controller of Stores, B. A. Railway, Calcutta.
14. The Controller of Stores, E. and I. Railway, Esplanade East, Calcutta.
15. The Controller of Stores, G. I. P. Railway, Lower Parel, Bombay.
16. Dalmia Cement and Paper Marketing Co. Ltd., Dalmianagar.
17. Director General, Ordnance Factories, 6, Esplanade East, Calcutta.
18. Garlick and Co. Ltd., Jacob Circle, Bombay.
19. Godrej and Boyce Manufacturing Co. Ltd., Parel, Bombay.
20. Hindustan Aircraft Ltd., Bangalore.
21. His Majesty's Mint, Bombay.
22. His Majesty's Mint, Calcutta.
23. His Majesty's Mint, Hyderabad (Deccan).
24. His Majesty's Mint, Lahore.

'25. Hind Cycles Ltd., Worli, Bombay.
26. Indian Hume Pipe Co. Ltd., Tatanagar.
27. Indian Paper and Pulp Co. Ltd., 11, Clive Row, Calcutta.
28. Indian Steel and Wire Products Ltd., P.O. Indranagar, Tatanagar.
29. Indian Tool Manufacturing Co. Ltd., Calcutta.
*30. Indian Cable Co. Ltd., Gulmuri P. O., Tatanagar.
*31. Indian Electric Works Ltd., Entally, Calcutta.
*32. Indian Sewing Machine Manufacturing Co. Ltd., 260, Ferozepore Road, Lahore.
*33. Investa Machine Tools Ltd., Clerk Road, Byculla, Bombay.
34. Jamshedpur Engineering and Machine Manufacturing Co. Ltd., Jamshedpur.
35. Jay Engineering Co. Ltd., Calcutta.
36. Jessop and Co., 93, Clive Street, Calcutta.
37. J. J. Saville and Co. Ltd., C|o Volkart Brothers, Graham Road, Bombay.
38. Mysore Kirloskar Ltd., Harihar (Mysore State).
39. National Insulated Cable Co. of India Ltd., Stephen House, 4, Dalhousie Square, Calcutta.
40. Praga Tools Corporation, Secunderabad.
41. Powells Ltd., Lamington Road, Bombay.
*42. Richardson and Cruddas, Byculla Iron Works, Byculla, Bombay.

Associations :

1. All India Manufacturers Organization, Industrial Assurance Building, Churchgate Station, Bombay.
2. Engineering Association of India, 102-A, Clive Street, Calcutta.
*3. High-Speed and Tool Steel Association of India, C|o M|s. McGregor and Balfour Ltd., 11, Clive Street, Calcutta.
*4. Indian Steel Makers' Association, Calcutta.
*5. Small Tool Manufacturers' Association, Bank Street, Bombay.

APPENDIX II.

List of persons who were present at the public inquiry.

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PRODUCERS

Mr. A. Rajagopalan „ S. K. Nanavati „ Maheschandra „ S. N. Sircar	Representing	Tata Iron & Steel Company Limited, Jamshedpur.
„ P. R. Balakrishnan „ D. V. Krishna Rao	Do.	Mysore Iron and steel Works, Bhadravati.
„ I. N. Gandhi „ C. G. Chandrasekhar	Do.	Indian Steel Makers Association, 102-A. Clive Street, Calcutta.

IMPORTERS

Mr. W. R. Plummer „ H. E. C. Clarke „ A. W. Ottignon	Representing	The High Speed & Tool Steel Association of India, Calcutta.
„ Spinks	Do.	Brown Baily, Sheffield.

CONSUMERS

Mr. R. Husicka „ Harish Chander Asthana	Representing	The Praga Tools Corporation, Secunderabad (Dn.)
„ K. Iyer	Do.	Small Tools Association, Bank Street, Bombay.

GOVERNMENT OFFICIALS

Mr. Jangbir Singh	Development Officer, D.G.I. & S., New Delhi.
„ D. D. Kamat	Director (Technical) Iron & Steel Control, Calcutta.

APPENDIX III(a).

Statement Showing the Quantity and Value of Imports of cast Tool Steel (High speed) into Br. India by Sea from the principal countries of consignment since 1936-1937.

	36–37	37–38	38–39	39–40	40–41	41–42	42–43	43–44	44–45	45–46
I. QUANTITY OF IMPORTS FROM :										
1. U. K. .. (Tons)	78	18	25	27	26	14	2	..	Information not available.	
2. Germany .. „	79	29	50	24	..	..	..	..	Do.	
3. Czechoslovakia „	14	7	..	..	..	..	..	..	Do.	
4. U. S. A. .. „	..	..	..	..	11	16	15	5	Do.	
5. Other Countries „	..	3	1	..	2	..	..	11	Do.	
Total quantity of imports	172 170*	57	76	51	39	30	17	16	Do.	
II. VALUE OF IMPORTS FROM :										
1. U. K. .. (Rs.)	67,473	30,406	40,495	40,192	56,082	41,520	7,545	1,319	Do.	
2. Germany .. „	40,973	35,905	47,888	16,935	..	..	..	..	Do.	
3. Czechoslovakia „	7,988	18,866	..	..	..	..	..	..	Do.	
4. U. S. A. .. „	..	..	..	..	56,986	71,933	82,278	52,331	Do.	
5. Other Countries „	..	3,755	6,581	3,745	10,059	724	..	64,985	Do.	
Total value of imports „	1,20,494 1,19,221*	88,932	94,964	60,872	1,23,127	1,14,177	89,823	1,18,635	1,532	4,370

* Excluding imports into Burma.

APPENDIX III (b).

Statement showing the quantity and value of imports of cast tool steel (carbon) into Br. India by sea from the principal countries of consignment since 1936-37.

	36–37	37–38	38–39	39–40	40–41	41–42	42–43	43–44	44–45	45–46
I. QUANTITY OF IMPORTS FROM :										
1. U. K. .. (Tons)	357	364	106	92	52	3	..	5	Information not available.	
2. Sweden .. ,,	78	56	..	3	..	..	..	..	Do.	
3. Germany .. ,,	53	32	..	12	..	..	..	..	Do.	
4. Czechoslovakia ,,	175	36	..	..	..	..	..	..	Do.	
5. U. S. A. .. ,,	..	..	..	..	146	..	10	1	Do.	
6. Other Countries ,,	3	5	..	..	..	..	2	3	Do.	
Total Quantity of Imports	666	493	106	107	198	3	12	9	10	21
II. VALUE OF IMPORTS FROM :										
1. U. K. .. (Rs.)	1,17,934	1,08,081	54,541	41,121	45,542	,95	73	4,640	Information not available.	
2. Sweden .. ,,	23,208	15,810	..	1,958	..	..	..	..	Do.	
3. Germany .. ,,	25,400	16,442	..	4,105	..	..	..	..	Do.	
4. Czechoslovakia ,,	78,097	33,522	..	..	..	..	..	..	Do.	
5. U. S. A. .. ,,	..	..	..	..	54,437	..	2,549	7,788	Do.	
6. Other Countries. ,,	1,657	1,846	170	15	..	..	2,381	3,120	Do.	
Total value of Imports ,,	2,46,296	1,75,701	54,711	47,199	98,979	1,795	5,003	15,548	13,307	13,085

APPENDIX IV.

Statement showing the quantities of certain Ferro-Alloys and Non-Ferrous Metals available in Government Stocks.

(*Vide* paragraph 15)

	Stock at Tatanagar as on 1-5-1947.	Stock at Jubbulpore as on 1-5-1947	Total stock at Tatanagar and Jubbulpore as on 1-5-1947.
	T--C-Q-Lbs.	T—C-Q-Lbs.	T—C-Q Lbs.
Nickel Pellets	0-9-3-23	Nil	0-9-3-23
Nickel Cathodes	4-19-2-16	Nil	4-19-2-16
Ferro-Chrome (4/6%C)	178-1-1-17	314-0-0-0	492-1-1-17
Ferro-Chrome (2%C)	271-7-2-26·5	Nil	271-7-2-26·5
Ferro-Chrome (0·2%C)	40-1-2-19	Nil	40-1-2-19
Ferro-Chrome (0·15%C)	0-9-2-24	Nil	0-9-2-24
Ferro-Molybdenum	15-10-1-19·5	149-19-1-0	165-9-2-19·5
Ferro-Tungsten	6-0-3-7	Nil	6-0-3-7
Ferro-Silicon	0-4-0-17	Nil	0-4-0-17

APPENDIX V.

Comparative statement showing the Government bond issue rates and average weighted prices of Tata's stocks of different Ferro-Alloys and Non-Ferrous metals used in the manufacture of alloy tool and special steels.

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	Government Bond issue rates/lb. of ferro-alloys and non-ferrous metals fixed for period of 1-6-46 to 31-5-47.	Tatas' average weighted cost/lb. of ferro-alloys and non-ferrous metals in stock on 1-4-47.
	Rs. As. Ps.	Rs. As. Ps.
Ferro-Alloys		
Ferro-Tungsten (80% grade)	6 5 0	4 4 3
Ferro-Molybdenum (70% grade)	2 13 3	2 15 8
Ferro-Venadium (40% grade)	7 0 5	7 2 0
Ferro-Chrome		
(1) 0·2% C. (68% grade)	0 14 8	0 14 2
(2) 2·0 % C. (68% grade)	1 1 10	0 14 4
(3) 4/6% C (68% grade)	0 9 5	0 9 1
Non-Ferrous Metals.		
Nickel (Pure)	7 2 5	2 13 3

APPENDIX VI.

Statement dated 6/7 June 1947 from the Director, Tool and Alloy Steels, Calcutta, showing the quantity of alloy, tool and special steel available for disposal from Government stocks.

	Belur stock	Various Depots about 60
	Tons	Tons
Carbon Steel above ·75% carbon	850	2,100
High Speed Steel 18% Tungsten & Tungsten Molybdenum ..	225	132
All other Alloy Steels	400	350
Low Carbon & Re-rolled shell bars	100	233
	1,575	2,815

In addition to the above the following material is available at the U.S. Army Surplus Depot in Mekong.

		Tons
(1) ·35/·40% and ·40/·50% Carbon Steel bars	..	17
(2) ·60/·70% rolled Carbon Steel bars	..	150
(3) ·95/1·15% Carbon Steel	..	400
(4) 1·15/1·35% Carbon Steel	..	18
(5) 3% Nickel Chrome Case Hardening Steel	..	9
(6) Alloy Tool Steel for Brass finishing 5/16" sqr.	..	3
(7) 18% Tungsten High Speed Steel Rounds	..	10
Do. Do. Squares	..	15
(8) Stainless Steel 14% Chromium 1" round	..	3
Do. Do. 2¼" square	..	15
(9) 9% Molybdenum High Speed Steel, Substitute, brand 66 rounds	..	30
Do. Do. squares ..	..	15
(10) 10% Tungsten Hot Die Steel and Molybdenum substitute rounds	..	80
(11) Cold Drawn Free Cutting Bars Two Sizes only	..	300
(12) 5% Cobalt High Speed Steel Rounds	..	2
Do. Do. Squares	..	1
(13) Nickel Chrome Molybdenum Alloy Steel Specification SAE, 3153 Rounds ..	..	20
Do. Do. Squares ..	..	50
Do. Do. Large Flats	..	140
(14) ·55% Carbon Sheets	..	4
(15) Chrome Molybdenum Alloy Sheets	..	120
(16) Nickel Chrome Alloy Steel Sheets	..	250
(17) Cold Rolled Strip of various tempers	..	580
(18) Nickel Chrome Case Hardening Steel Specification SAE 3312—Flats	..	85
(19) 1½% Nickel Chrome Steel, Specification SAE 3240—Squares ..	..	3
Do. —Flats ..	..	20
(20) 3½% Nickel Chrome Case Hardening Steel, Specification SAE 3415	..	75
(21) 3½% Nickel Chrome Case Hardening Steel, Specification SAE 3450	..	400
(22) Alloy Steel to obscure analysis	..	300/400

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